In the Claims:

Amend the claims as follows:

<u>Listing of Claims</u>

1.   (Currently amended) A method for creating a multidimensional visual representation of a group of data elements having integrated temporal and spatial properties, the data elements being included in the visual representation as a corresponding plurality of visual elements, ~~the data elements of the group linked by at least one association~~, the method comprising the steps of:

~~assembling the group of data elements using the at least one association;~~

generating a spatial domain of the visual representation to include a reference surface for providing a spatial reference frame having at least two spatial dimensions, the reference surface for relating a first visual element of the plurality of visual elements representing a first data element of the group to a first location of interest in the spatial reference frame and relating a second visual element of the plurality of visual elements representing a second data element of the group to a second location of interest in the spatial reference frame;

generating a temporal domain of the visual representation operatively coupled to the spatial domain, the temporal domain for providing a common temporal reference frame for the locations of interest, the temporal domain including a first time track coupled to the first location of interest and a second time track coupled to the second location of interest, the first visual element positioned on the first time track and the second visual element positioned on the second time track, each of the time tracks extending with respect to the reference surface and configured for visually representing a respective temporal sequence of a plurality of the data elements at each of the locations of interest ~~of the reference surface~~;

positioning a respective instant of focus at the intersection region between each of the time tracks and the reference surface at the respective locations of interest, the instant of foci being used for visually distinguishing a range of past

T8468092US\TOR_LAW\ 6313661\1

time in the temporal domain preceding the instant of foci and a range of future time in the temporal domain after the instant of foci, each of the instant of foci configured for synchronous repositioning along their respective one of the time tracks; and

assigning a connection visual element in the visual representation between the first visual element and the second visual element, the connection visual element for representing ~~a~~ an ~~distributed~~ association distributed in at least one of the domains between the first visual element and the second visual element;

wherein the visual representation is displayed on a user interface for subsequent interaction with user events.

2.   (original) The method of claim 1, wherein the visual representation of the group of data elements is selected from the group comprising; a concurrent time and geographic context and a concurrent time and diagrammatic context.

3.   (Currently amended) The method of claim 2, wherein the diagrammatic context includes a plurality of nodes of a defined process, such that one of the nodes is positioned at the first location of interest and a second one of the nodes is positioned at the second location of interest. ~~further comprising the step of configuring the reference surface for providing an instant of focus in the temporal reference frame for at least some of the temporal and spatial properties of the group of data elements, the instant of focus coupled to the locations of interest of the reference surface, the instant of focus selected by the user events.~~

4.   (Currently amended) The method of claim 3 further comprising the step of ~~configuring~~ specifying a time range of the temporal reference frame ~~for providing a time range~~ selected from the group comprising: ~~a~~ the ~~past~~ range of past time of the temporal sequence preceding the instant of focus; and ~~a~~ the ~~future~~ range of future time of the temporal sequence after the instant of focus.

5.   (Currently amended) The method of claim ~~4,~~1 further comprising the step of intersecting each of the ~~first~~ time tracks through ~~the first~~ their respective location of interest such that the past ranges of the ~~first~~ time tracks extends from one side of the reference surface and the future ranges of the ~~first~~ time tracks extends from the other side of the reference surface, ~~the instant of focus located on the first time track at the intersection point between the first time track and the reference surface~~.

6.   (Currently amended) The method of claim 5 further comprising the step of arranging ~~a first~~ the plurality of the visual elements along the ~~first~~ time tracks according to the times at which the corresponding ~~visual~~ data elements occurred in the temporal reference frame, at least one of the plurality of the visual elements being independent and as such being not related to either of the first and second visual elements.

7.   (cancelled)

8.   (Currently amended) The method of claim ~~7~~ 5 further comprising the step of arranging ~~a second~~ the plurality of the visual elements along the ~~second~~ time tracks according to the times at which the corresponding data ~~visual~~ elements occurred in the temporal reference frame, the type of the data elements selected from the group comprising: entities; events; locations; and associations.

9.   (Currently amended) The method of claim 6, wherein the location in the temporal reference frame of each of the plurality of visual elements on the time tracks is proportional to the distance from the instant of ~~focus~~ foci associated with the reference surface, the type of the visual elements selected from the group comprising: entities; events; locations; and associations.

10.   (original) The method of claim 9, wherein the time tracks are represented as timelines in the visual representation.

11. (original) The method of claim 10, wherein the temporal reference frame has a scale selected from the group comprising linear and logarithmic.

12. (Currently amended) The method of claim 2 further comprising the step of maintaining an orientation of the time tracks with respect to the reference surface such that changes in the ~~attitude~~ viewing orientation of the reference surface in response to the user events results in a corresponding change in the viewing orientation of the time tracks.

13. (Currently amended) The method of claim 12, wherein the orientation angle between the time tracks and the reference surface is 90 degrees.

14. (Currently amended) The method of claim 2 further comprising the step of maintaining an orientation of the time tracks with respect to the reference surface such that changes in the viewing orientation ~~attitude~~ of the reference surface in response to the user events does not result in a corresponding change in the viewing orientation of the time tracks such that the time tracks are maintained in a vertical orientation.

15. (original) The method of claim 14, wherein the orientation of the time tracks is such that the length of the time tracks is maximized as perceived by a user of the user interface.

16. (Currently amended) The method of claim 2 further comprising the step of overlapping a time chart on the first time track and on the second time track, the time chart having a time axis and a spatial axis for representing the temporal reference frame and at least one of the spatial dimensions respectively, such that visual reference elements between the time axis and the time tracks are maintained as a new spatial orientation of the spatial reference frame is selected and the time tracks in the time chart remain continuously connected across the time chart and the spatial reference frame so that the time tracks in the time chart are repositioned to correspond to the new spatial orientation.

17.   (cancelled)

18.   (cancelled)

19.   (cancelled)

20.   (cancelled)

21.   (cancelled)

22.   (Currently amended) The method of claim 2, wherein types of the data elements are selected from the group comprising; entity, location, association, and event.

23.   (original) The method of claim 22, wherein the event data element type represents an action taking place at a particular one of the locations of interest in the spatial reference frame and at a particular time in the temporal reference frame.

24.   (Currently amended) The method of claim 23, wherein the event data element type has data properties and display properties selected from the group comprising; a short text label, description, location, start-time, end-time, general event type, icon reference, visual layer settings, priority, status, user comment, certainty value, source of information, default + and user-set color, reference document, and reference photograph.

25.   (original) The method of claim 22, wherein the entity data element type represents an actor involved in a selected event.

26.   (Currently amended) The method of claim 25, wherein the entity data element type has data properties and display properties selected from the group

comprising; short text label, description, general entity type, icon reference, visual layer settings, priority, status, user comment, certainty value, source of information, default + and user-set color, and reference document, and reference photograph. .

27.   (original) The method of claim 22, wherein the location data element type represents a location within the spatial reference frame.

28.   (original) The method of claim 27, wherein the location data element type has data properties and display properties selected from the group comprising; position coordinates, a label, description, color information, precision information, location type, non-geospatial flag and user comments, reference document, and reference photograph.

29.   (Currently amended) The method of claim 28, wherein the location data element type is selected from the group comprising; a physical location on a geospatial map, a physical location as a node in a diagram, and a virtual location related to a geospatial map such that the virtual location is not assigned to a specific physical location on the geospatial map.

30.   (Currently amended) The method of claim 22, wherein the at least one association describes a pairing between two or more of the data elements for providing an information data object related to both of the two or more data elements.

31.   (Currently amended) The method of claim 30, wherein the connection visual element is a solid selected line type representing a direct connection between the first visual element and the second visual element.

32.   (Currently amended) The method of claim 3130, wherein the information data object is selected from the group comprising: a communication connection describing communication details transferred between the two or more data

elements; a financial transaction or other transaction; and a relationship connection describing social details in common between the two or more data elements. ~~solid line has a pointer for indicating a vector property of the visual connection element.~~

33.   (cancelled)

34.   (Currently amended) The method of claim ~~2~~ 30, wherein the association is predefined or is created due to user interaction with the visualization representation. ~~further comprising the step of updating the visual elements in the visual representation in response to the user events.~~

35.   (Currently amended) The method of claim ~~34~~ 1, ~~wherein the user events are generated in response to~~ further comprising the step of manipulating ~~on~~ the position of the instant of foci on the time tracks for facilitating ~~by the user of an interactive control for modifying~~ synchronous modification of the visual properties of the ~~plurality of visual elements on the time tracks.~~

36.   (Currently amended) The method of claim 35, wherein synchronous modification of the visual properties of the plurality of visual elements includes concurrent and continuous updating as the instant of foci are repositioned on the time tracks. ~~the interactive control is selected from the group comprising a time range selector and an instant of focus selector.~~

37.   (Currently amended) The method of claim 35 further comprising the step of adding at least one further visual element on one of the time tracks ~~animating the display of at least one of the visual elements of the visual representation~~ in response to the manipulation of the instant of foci with respect to a selected time range in the temporal reference frame ~~interactive control.~~

38.   (Currently amended) The method of claim ~~35~~7, ~~wherein~~ further comprising the step of changing the displayed visual properties of the connection visual

element ~~of the visual representation~~ ~~is animated~~ in response to the manipulation of the instant of foci ~~interactive controls~~.

39.   (Currently amended) The method of claim 38, wherein the connection visual element is ~~coupled~~ associated with ~~to the~~ movement of an entity visual element across the visual representation between the first location of interest and the second location of interest, the entity visual element representing an actor involved in a selected event.

40.   (Currently amended) The method of claim 35 further comprising the step of applying a filtering function to the visual elements and the at least one related association to select a subgroup thereof, selection of the subgroup according to a method selected from the group comprising: criteria matching, algorithmic methods, and manual selection.

41.   (cancelled)

42.   (cancelled)

43.   (Currently amended) A system for creating a multidimensional visual representation of a group of data elements having integrated temporal and spatial properties, the data elements being included in the visual representation as a corresponding plurality of visual elements, ~~the data elements of the group~~ ~~linked by at least one association,~~ the system comprising:
       a visualization manager for assembling the group of data elements ~~using~~ ~~the at least one association~~ and for assigning a connection visual element in the visual representation between a first visual element of the plurality of visual elements representing a first data element of the group and a second visual element of the plurality of visual elements representing a second data element of the group;
       a spatial visualization component configured for generating a spatial domain of the visual representation to include a reference surface for providing a

spatial reference frame having at least two spatial dimensions, the reference surface for relating the first visual element to a first location of interest in the spatial reference frame and relating the second visual element to a second location of interest in the spatial reference frame; ~~and~~

a temporal visualization component configured for generating a temporal domain of the visual representation operatively coupled to the spatial domain, the temporal domain for providing a common temporal reference frame for the locations of interest, the temporal domain including a first time track coupled to the first location of interest and a second time track coupled to the second location of interest, the first visual element positioned on the first time track and the second visual element positioned on the second time track, each of the time tracks <u>extending with respect to the reference surface and</u> configured for visually representing a respective temporal sequence of a plurality of the data elements at each of the locations of interest ~~of the reference surface~~; <u>and</u>

<u>an interactive control component for positioning a respective instant of focus at the intersection region between each of the time tracks and the reference surface at the respective locations of interest, the instant of foci being used for visually distinguishing a range of past time in the temporal domain preceding the instant of foci and a range of future time in the temporal domain after the instant of foci, each of the instant of foci configured for synchronous repositioning along their respective one of the time tracks;</u>

wherein the connection visual element represents <u>an</u> ~~a distributed~~ association <u>distributed</u> in at least one of the domains between the first visual element and the second visual element such that the visual representation is displayed on a user interface for subsequent interaction with user events.

44.   (Currently amended) A computer program product for creating a multidimensional visual representation of a group of data elements having integrated temporal and spatial properties, the data elements being included in the visual representation as <u>a</u> corresponding <u>plurality of</u> visual elements, ~~the data elements of the group linked by at least one association~~, the computer program product comprising:

a computer readable medium;

a visualization module stored on the computer readable medium for assembling the group of data elements ~~using the at least one association~~ and for assigning a connection visual element in the visual representation between a first visual element <u>of the plurality of visual elements</u> representing a first data element of the group and a second visual element <u>of the plurality of visual elements</u> representing a second data element of the group;

a spatial visualization module stored on the computer readable medium for generating a spatial domain of the visual representation to include a reference surface for providing a spatial reference frame having at least two spatial dimensions, the reference surface for relating the first visual element to a first location of interest in the spatial reference frame and relating the second visual element to a second location of interest in the spatial reference frame; ~~and~~

a temporal visualization module stored on the computer readable medium for generating a temporal domain of the visual representation operatively coupled to the spatial domain, the temporal domain for providing a common temporal reference frame for the locations of interest, the temporal domain including a first time track coupled to the first location of interest and a second time track coupled to the second location of interest, the first visual element positioned on the first time track and the second visual element positioned on the second time track, each of the time tracks <u>extending with respect to the reference surface and</u> configured for visually representing a respective temporal sequence of a plurality of the data elements at each of the locations of interest ~~of the reference surface~~; and

<u>an interactive control component for positioning a respective instant of focus at the intersection region between each of the time tracks and the reference surface at the respective locations of interest, the instant of foci being used for visually distinguishing a range of past time in the temporal domain preceding the instant of foci and a range of future time in the temporal domain after the instant of foci, each of the instant of foci configured for synchronous repositioning along their respective one of the time tracks;</u>

Gowling Lafleur Henderson LLP   Page 12

T8468092US\TOR_LAW\ 6313661\1

PAGE 17/33 * RCVD AT 5/26/2006 2:58:24 PM [Eastern Daylight Time] * SVR:USPTO-EFXRF-5/21 * DNIS:2738300 * CSID: * DURATION (mm-ss):14-42

wherein the connection visual element represents a an distributed association distributed in at least one of the domains between the first visual element and the second visual element such that the visual representation is displayed on a user interface for subsequent interaction with user events.

45.   (new) The method of claim 4 further comprising the step of specifying the range of past time independently from the range of future time.

46.   (new) The method of claim 4 further comprising the step of specifying the range of past time and the range of future time independently from the instant of foci.

47.   (new) The method of claim 5 further comprising the step of configuring a visual translucency of the reference surface in order to facilitate showing the time tracks extending below and above the reference surface.

48.   (new) The method of claim 8, wherein the visual elements positioned on the time tracks are icons.

49.   (new) The method of claim 29 further comprising the step of positioning the virtual location at an edge of the geospatial map in the spatial reference frame.

50.   (new) The method of claim 35 further comprising the step of removing at least one of the plurality of visual elements from at least one of the time tracks in response to the manipulation of the instant of foci with respect to a selected time range in the temporal reference frame.

51.   (new) The method of claim 35 further comprising the step of removing one of the time tracks and the respective visual elements positioned thereon from the visualization representation in response to the respective visual elements

Gowling Lafleur Henderson LLP   Page 13
T8468092US\TOR_LAW\ 6313681\1

PAGE 18/33 * RCVD AT 5/26/2006 2:58:24 PM [Eastern Daylight Time] * SVR:USPTO-EFXRF-5/21 * DNIS:2738300 * CSID: * DURATION (mm-ss):14-42

becoming outside of a selected time range in the temporal reference frame in response to the repositioning of the instant of foci.

52.   (new) The method of claim 35 further comprising the step of reassigning associated ones of the visual elements from the range of past time of the time tracks on one side of the reference surface to the range of future time of the time tracks on the other side of the reference surface in response to manipulation of the position of the instant of foci.

53.   (new) The method of claim 52 further comprising the step of positioning selected ones of the visual elements on the reference surface associated with ones of the data elements having a present time in the temporal reference frame corresponding to the time represented by the instant of foci.

54.   (new) The method of claim 52 further comprising the step of positioning selected ones of the visual elements above the reference surface associated with ones of the data elements having a present time in the temporal reference frame corresponding to the time represented by the instant of foci.

55.   (new) The method of claim 53, wherein the position of each of the selected visual elements is selected from the group comprising: at the location of interests; and interpolated between the location of interests.

56.   (new) The method of claim 53 further comprising the step of animating the change in position of each of the selected visual elements on the reference surface as the positions of the instant of foci are manipulated, such that the visual properties of the plurality of visual elements in the visualization representation are updated in both the temporal and spatial domains.

57.   (new) A system for creating a multidimensional visual representation of a group of data elements having integrated temporal and spatial properties, the

Gowling Lafleur Henderson LLP   Page 14
T8468092US\TOR_LAW\ 6313661\1

PAGE 19/33 * RCVD AT 5/26/2006 2:58:24 PM [Eastern Daylight Time] * SVR:USPTO-EFXRF-5/21 * DNIS:2738300 * CSID: * DURATION (mm-ss):14-42

data elements being included in the visual representation as a corresponding plurality of visual elements, the system comprising:

a visualization manager for assembling the group of data elements including a first data element represented by a first visual element of the plurality of visual elements and a second data element represented by a second visual element of the plurality of visual elements;

a spatial visualization component configured for generating a spatial domain of the visual representation to include a reference surface for providing a spatial reference frame having at least two spatial dimensions, the reference surface for relating the first visual element to a first location of interest in the spatial reference frame and relating the second visual element to a second location of interest in the spatial reference frame;

a temporal visualization component configured for generating a temporal domain of the visual representation operatively coupled to the spatial domain, the temporal domain for providing a common temporal reference frame for the locations of interest, the temporal domain including a first time track coupled to the first location of interest and a second time track coupled to the second location of interest, the first visual element positioned on the first time track and the second visual element positioned on the second time track, each of the time tracks extending with respect to the reference surface and configured for visually representing a respective temporal sequence of a plurality of the data elements at each of the locations of interest; and

an interactive control component for positioning a respective instant of focus at the intersection region between each of the time tracks and the reference surface at the respective locations of interest, the instant of foci being used for visually distinguishing a range of past time in the temporal domain preceding the instant of foci and a range of future time in the temporal domain after the instant of foci, each of the instant of foci configured for synchronous repositioning along their respective one of the time tracks;

wherein the visual representation is displayed on a user interface for subsequent interaction with user events.

58. (new) The system of claim 57, wherein the visual representation of the group of data elements is selected from the group comprising; a concurrent time and geographic context and a concurrent time and diagrammatic context.

59. (new) The system of claim 58, wherein the diagrammatic context includes a plurality of nodes of a defined process, such that one of the nodes is positioned at the first location of interest and a second one of the nodes is positioned at the second location of interest.

60. (new) The system of claim 59 further comprising a time range indicator of the temporal reference frame for specifying a range selected from the group comprising: the range of past time of the temporal sequence preceding the instant of focus; and the range of future time of the temporal sequence after the instant of focus.

61. (new) The system of claim 4 further comprising a time range indicator of the temporal reference frame for specifying the range of past time independently from the range of future time.

62. (new) The system of claim 4 further comprising a time range indicator of the temporal reference frame for specifying the range of past time and the range of future time independently from the instant of foci.

63. (new) The system of claim 57, wherein the plurality of the visual elements are arranged along the time tracks according to the times at which the corresponding data elements occurred in the temporal reference frame, at least one of the plurality of the visual elements being independent and as such being not related to either of the first and second visual elements.

64. (new) The system of claim 57, wherein the location data element type is selected from the group comprising; a physical location on a geospatial map, a physical location as a node in a diagram, and a virtual location related to a

geospatial map such that the virtual location is not assigned to a specific physical location on the geospatial map.

65.   (new) The system of claim 64, wherein the virtual location is positioned at an edge of the geospatial map in the spatial reference frame.

66.   (new) The system of claim 58, wherein an association describes a pairing between two or more of the data elements for providing an information data object related to both of the two or more data elements.

67.   (new) The system of claim 66, wherein the information data object is selected from the group comprising: a communication connection describing communication details transferred between the two or more data elements; a financial transaction or other transaction; and a relationship connection describing social details in common between the two or more data elements.

68.   (new) The system of claim 57, wherein the position of the instant of foci is configured for manipulation on the time tracks for facilitating synchronous modification of the visual properties of the plurality of visual elements on the time tracks.

69.   (new) The system of claim 68, wherein synchronous modification of the visual properties of the plurality of visual elements includes concurrent and continuous updating as the instant of foci are repositioned on the time tracks.

70.   (new) The system of claim 68, wherein the visualization manager is further configured for adding at least one further visual element on one of the time tracks in response to the manipulation of the instant of foci with respect to a selected time range in the temporal reference frame.

71.   (new) The system of claim, wherein the visualization manager is further configured for removing at least one of the plurality of visual elements from at

Gowling Lafleur Henderson LLP   Page 17
T8468092US\TOR_LAW\6313661\1

PAGE 22/33 * RCVD AT 5/26/2006 2:58:24 PM [Eastern Daylight Time] * SVR:USPTO-EFXRF-5/21 * DNIS:2738300 * CSID: * DURATION (mm-ss):14-42

least one of the time tracks in response to the manipulation of the instant of foci with respect to a selected time range in the temporal reference frame.

72.   (new) The system of claim 68, wherein the visualization manager is further configured for removing one of the time tracks and the respective visual elements positioned thereon from the visualization representation in response to the respective visual elements becoming outside of a selected time range in the temporal reference frame in response to the repositioning of the instant of foci.

73.   (new) The system of claim, wherein the visualization manager is further configured for reassigning associated ones of the visual elements from the range of past time of the time tracks on one side of the reference surface to the range of future time of the time tracks on the other side of the reference surface in response to manipulation of the position of the instant of foci.

74.   (new) The system of claim 73, wherein the visualization manager is further configured for positioning selected ones of the visual elements on the reference surface associated with ones of the data elements having a present time in the temporal reference frame corresponding to the time represented by the instant of foci.

75.   (new) The system of claim 73, wherein the visualization manager is further configured for positioning selected ones of the visual elements above the reference surface associated with ones of the data elements having a present time in the temporal reference frame corresponding to the time represented by the instant of foci.

76.   (new) The system of claim 74, wherein the position of each of the selected visual elements is selected from the group comprising: at the location of interests; and interpolated between the location of interests.

T8468092US\TOR_LAW\ 6313661\1

77.   (new) The system of claim 74, wherein the visualization manager is further configured for animating the change in position of each of the selected visual elements on the reference surface as the positions of the instant of foci are manipulated, such that the visual properties of the plurality of visual elements in the visualization representation are updated in both the temporal and spatial domains.

78.   (new) The system of claim 68, wherein the visualization manager is further configured for changing the displayed visual properties of the connection visual element in response to the manipulation of the instant of foci .

79.   (new) The system of claim 78, wherein the connection visual element is associated with movement of an entity visual element across the visual representation between the first location of interest and the second location of interest, the entity visual element representing an actor involved in a selected event.

80.   (new) The system of claim 68, a filtering function is applicable to the visual elements and the at least one related association to select a subgroup thereof, selection of the subgroup according to a method selected from the group comprising; criteria matching, algorithmic methods, and manual selection.